

## AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

### Listing of claims

1. (Currently amended) An ~~[[A]]~~ article ~~whose~~ comprising:  
a surface ~~exhibits having~~ a composite material, ~~in full or in parts, wherein~~ the composite material ~~consisting of~~ includes a non-metallic substrate containing at least one polymer~~[[,]]~~ and a metallic layer ~~present is deposited thereon and deposited by a chemical reduction process~~ without applying an external current, ~~the composite material~~ having an adhesive strength of at least 4 N/mm<sup>2</sup> characterised in that the boundary layer present between the non-metallic substrate and the metallic layer ~~exhibits having~~ a calcium content, determined by EDX analysis of a microtome section, of maximum 0.5 % by wt., based on an analysis area of 1 x 1 µm whose centre runs through the boundary layer.
2. (Original) ~~The~~ ~~[[A]]~~ article ~~according to of claim 1 whose surface exhibits a composite material in full or in parts, wherein this~~ the composite material ~~exhibiting has~~ a first non-metallic layer and a second metallic layer applied thereon characterised in that
  - a) the surface of the article is not chemically pretreated before the application of the metallic layer; and
  - b) the metallic layer is ~~not~~ applied by a chemical reduction process ~~thermal spraying, CVD, PVD or laser treatment.~~
3. (Currently amended) The ~~[[A]]~~ article ~~according to of claim 1~~ characterised in that the boundary present between the non-metallic substrate and the metallic layer exhibits a roughness with a ~~[[n]]~~ maximum R<sub>z</sub> value of ~~maximum~~ 35 µm.
4. (Currently amended) The ~~[[A]]~~ article ~~according to of claim~~ ~~[[1]]~~ 2, characterised in that the non-metallic layer contains at least one fibre-reinforced polymer, ~~in particular a polymer reinforced with carbon fibre and the diameter of the fibre is less than 10 µm.~~

5. (Currently amended) ~~The [[A]]article according to of~~ claim 1 characterised in that the boundary present between the non-metallic substrate and the metallic layer exhibits a roughness with a ~~[[n]] maximum~~  $R_z$  value of ~~maximum~~ 100  $\mu\text{m}$  and that the non-metallic substrate contains at least one fibre-reinforced polymer, ~~in particular a polymer reinforced with glass fibre, and the diameter of the fibre is more than 10  $\mu\text{m}$ .~~

6. (Currently amended) ~~The [[A]]article according to of~~ claim 1 characterised in that the non-metallic substrate is the surface of the article.

7. (Currently amended) ~~The [[A]]article according to of~~ claim 1 characterised in that the non-metallic substrate is not the surface of the article.

8. (Currently amended) ~~The [[A]]article according to of~~ claim 1 characterised in that the standard deviation of the adhesive strength of the metallic layer at six different measured value points distributed over the surface of the composite material is maximum 25 %, ~~in particular maximum 15 %~~, of the arithmetic mean.

9. (Currently amended) ~~The [[A]]article according to of~~ claim 1 characterised in that the polymer is selected from the group of polypropylene, polytetrafluoroethylene, polyamide, polyethylene, polyvinyl chloride, polystyrene, epoxy resin, polyether ether ketone, polyoxymethylene, polyformaldehyde, polyacetal, polyurethane, polyether imide, polyphenyl sulphone, polyphenylene sulphide, polyarylamide, polycarbonate and polyimide.

10. (Currently amended) ~~The [[A]]article according to of~~ claim 1 characterised in that the metal layer deposited without applying an external current is a metal alloy or a metal dispersion layer.

11. (Currently amended) ~~The [[A]]article according to of~~ claim 1 characterised in that the metal layer deposited without applying an external current is a copper, nickel or gold layer.

12. (Currently amended) ~~The~~ [[A]]article ~~according to of~~ claim 10 characterised in that the metal dispersion layer deposited without applying an external current is a copper, nickel or gold layer with embedded non-metallic particles.

13. (Currently amended) ~~The~~ [[A]]article ~~according to of~~ claim 12 characterised in that the non-metallic particles exhibit a hardness of more than 1,500 HV and are selected from the group of silicon carbide, corundum, diamond and tetraboron carbide.

14. ((Currently amended) ~~The~~ [[A]]article ~~according to of~~ claim 12 characterised in that the non-metallic particles exhibit friction-reducing properties and are selected from the group of polytetrafluoroethylene, molybdenum sulphide, cubic boron nitride and tin sulphide.

15. (Currently amended) ~~The~~ [[A]]article ~~according to of~~ according to claim 1 characterised in that, onto the metallic layer deposited without external current, a layer of aluminium, titanium or their alloys is applied whose surface is anodically oxidised or ceramics-treated.

16. (Currently amended) ~~The~~ [[A]]article ~~according to of~~ claim 15 characterised in that one or several metallic layers are also arranged between the metallic layer deposited without applying an external current and the layer of aluminium, titanium or its alloys.

17. (Currently amended) ~~The~~ [[A]]article ~~according to of~~ claim 15 characterised in that the surface of the article is a ceramic oxide layer of aluminium, titanium or their alloys, which layer is coloured black by foreign ion embedments.

18. (Withdrawn-currently amended) Process for the production of ~~an~~ the article ~~according to of~~ claim 1 comprising the following steps:

- i. the surface of the non-metallic ~~layer~~ substrate is not chemically pretreated before applying the metallic layer deposited without applying an electric current;
- ii. the surface of the non-metallic ~~layer~~ substrate is microstructured in a first step by a blasting agent;

- iii. the metallic layer is subsequently applied by metal deposition without applying an external current.

19. (Withdrawn-currently amended) Use of ~~an~~ the article ~~according to~~ of claim 1 as roller for the sheet product processing industry (films, paper, textiles, printing), a structural part of turbomolecular pumps (ring for the compressor stage), handle for household equipment (saucepans, lids), components for the aeroplane industry (handle, handrail) and the space industry (sun sails), structural part for the electronics industry (condenser, sonic field condenser, sonic rider, microwave hollow-cored conductor, circuit breaker surface, antenna, antenna housing), structural part for the moveable structural parts of cyclones, wind sifters, structural parts subject to mechanical, thermal and/or chemical stresses for the motor vehicle industry (brake pistons for motor vehicles) or as a mould or component for the injection moulding industry.

20. (Currently amended) The ~~[[A]]~~article ~~according to~~ of claim 16 characterised in that the surface of the article is a ceramic oxide layer of aluminium, titanium or their alloys, which layer is coloured black by foreign ion embedments.

21. (New) The article of claim 4, wherein the fiber is a carbon fiber having a diameter of less than 10  $\mu\text{m}$ .

22. (New) The article of claim 5, wherein the polymer is reinforced with glass fibre and the diameter of the fibre is more than 10  $\mu\text{m}$ .

23. (New) The article of claim 8, wherein the standard deviation of the adhesive strength amounts to maximum 15% of the arithmetic mean.